

Subject Index to Volume 32

A

- A6 cells
 amiloride-blockable sodium channels in, aldosterone effects, C825
 sodium channel activity, amiloride-binding subunit, C1111
- ACE: *see* Angiotensin-converting enzyme
- Acetylcarnitine, metabolism, fat availability effects, skeletal muscle, C653
- Acetylcholine, diacylglycerol and, M-current, gastric smooth muscle cells, C1274
- Acetyl coenzyme A, metabolism, fat availability effects, skeletal muscle, C653
- ACh: *see* Acetylcholine
- Acidosis
 protection from chemical hypoxia and, hepatocytes, C684
 transamination role in, LLC-PK₁ cultures, C47
- Adenosine, receptor-mediated pathways, LLC-PK₁ cells, C729
- Adenosine diphosphate, extracellular nucleotide elevation of calcium, osteoblasts, C1040
- Adenosine monophosphate, cyclic adenosine A₁ receptors, cell line (28A) from collecting tubule, C502
- angiotensin II effects, kidney cells (opossum), C1141
- angiotensin II transduction pathways, proximal tubule, C750
- forskolin effects, conductive anion pathways, skin (toad), C166
- intracellular signal transduction, C723
- ion transport regulation, apical membrane, gallbladder (*Necturus*), C187
- messenger system, muscarinic receptors in MDCK cells, C1289
- PG receptors and, myometrium, C257
- phosphates and, muscle fatigue (frog), C803
- production, prostaglandin effects, CCD cells, C1208
- protein kinase dependent on activation by cGMP, chloride transport, intestine, C607
- hydrosmotic effect of vasopressin and, collecting duct, C147
- PTH transduction pathways, pH effects, proximal tubules, C941
- Adenosine triphosphatase
 activity, skeletal muscle response to hypothyroidism, C86
- cooperative activation of myosin, permeabilized smooth muscle, C210
- disulfide bonds and, β -subunit, C39
- proton, plasma membrane, epididymis, C913
- Adenosine triphosphate
 calcium signaling, endothelial, C1029
- dicalciphor, KCN toxicity and, C405
- extracellular
 calcium ion mobilization by, myocytes, C933
- chloride secretion and, nasal epithelia, C348
- extracellular nucleotide elevation of calcium, osteoblasts, C1040
- glucose transporter expression, hypoxia and, endothelial cells, C326
- Adenylate cyclase
 calcium ion mobilization and, myocytes, C933
- cAMP messenger system, muscarinic receptors in MDCK cells, C1289
- Adenylyl cyclase, kinetics, adipocytes, genetic diabetes, C121
- Adipocytes, G protein levels in, genetic diabetes, C121
- Adipose tissue, G protein levels in, genetic diabetes, C121
- Adrenalectomy, sodium-potassium-ATPase mRNA expression and, distal nephron, C810
- Adrenal medulla, chromaffin cells, calcium channels, permeation by calcium and manganese, C818
- Agonists, activation of calcium channels, airway smooth muscle cells, C106
- Airway
 calcium channels, carbachol effects, C69
- epithelia, chloride secretion, ATP and, C348
- smooth muscle cells, agonists activated calcium channels in, C106
- Alanine, metabolic acidosis, LLC-PK₁ cultures, C47
- Albumin, gene transcriptions of, oncotic pressure effects, hepatoma cells, C397
- Aldosterone
 amiloride-blockable sodium channels and, A6 epithelia, C825
- membrane conductance and, TBM cells, C384
- sodium-potassium-ATPase pumps, rapid recruitment of, cortical collecting tubule, C61
- Alkalinization, thrombin regulation of pH, Saos-2 cells, C1266
- Amiloride
 activation of sodium-hydrogen exchange, lithium and, muscle fibers (barnacle), C246
- heat-induced calcium increase, epidermoid A 431 cells, C30
- histamine-induced chloride secretion and, nasal epithelium, C1190
- sodium channels blockable by, aldosterone effects, A6 cells, C825
- sodium channel subunit that binds, sodium channel activity and, C1111
- sodium-potassium-ATPase pumps, rapid recruitment of, cortical collecting tubule, C61
- Amino acids
 anion channels for, MDCK cells, C1200
- transport, transmucosal impedance and, small intestine, C480
- 5'-Aminolevulinate synthase, activity, anemia effects, skeletal muscle, C429
- 4-Aminopyridine
 isosmotic cell swelling, vestibular dark cells, C616
- spiking electrical behavior, colonic longitudinal muscle, C237
- voltage-dependent potassium currents, colonic circular muscle, C226
- Ammoniogenesis, transamination role in, LLC-PK₁ cultures, C47
- AMP deaminase
 altered kinetics, myosin binding and, C294
- binding, contracting skeletal muscle, C287
- Amphotericin, perforated-patch recordings, sodium channel kinetics, C1234
- Amphotericin B, block, basolateral potassium channels, HT-29 cells, C674
- Anemia, 5'-aminolevulinate synthase activity and, skeletal muscle, C429
- Angiotensin
 detection, myocytes and fibroblasts, C851
- renin and, intracardiac detection of, neonate, C838
- Angiotensin-converting enzyme
 ACE gene expression, endothelial cells, C743
- angiotensin I and II detection, myocytes and fibroblasts, C851
- Angiotensin-converting enzyme inhibitors, ACE gene expression and, endothelial cells, C743
- Angiotensin II
 hypertrophic growth, protein kinase C and, cardiomyocytes, C319
- renin and, intracardiac detection of, neonate, C838
- sodium-hydrogen exchange activity and, kidney cells (opossum), C1141
- transduction pathways and, proximal tubule, C750
- Anions
 activation and, permeabilized neutrophils, C78
- conductive pathways, forskolin effects, skin (toad), C166
- Anisotropy, fluorescence, organic osmolytes and cytoplasmic viscosity, kidney cells, C901
- ANP: *see* Atrial natriuretic peptide
- Anthracycline-9-carboxylic acid, cochlear outer hair cells, C1088
- Anthranilic derivatives, iodide channel, thyroid, C590
- Aorta
 calcium-independent isoforms, protein kinase C, C714
- calcium influx, via sodium-calcium exchange, myocytes, C628, C635
- Apamin, receptors: *see* Receptors
- Apolipoprotein B, gene transcriptions of, oncotic pressure effects, hepatoma cells, C397
- Arachidonic acid, uncoupling, cardiac myocyte pairs, neonate, C494
- Arecoline, cAMP messenger system and, MDCK cells, C1289
- Arrhythmia, myocyte pairs, eicosanoid uncoupling of, C494
- Arterioles, micromechanics study, force transducer for, C700
- Aspartate, anion channels for, MDCK cells, C1200

- Astrocytes, CNS, inflammatory cytokines in, C1
 Atherosclerosis, endothelin-1 mRNA, physiological shear downregulation, C389
 ATPase: *see* Adenosine triphosphatase; Hydrogen-potassium-ATPase; Sodium-potassium-ATPase
 ATP: *see* Adenosine triphosphate
 Atrial natriuretic peptides
 C-type, growth factor-dependent DNA synthesis and, smooth muscle cells, C1001
 receptor subtypes, signal transduction mechanisms, C334

B

- Barium
 block, basolateral potassium channels, HT-29 cells, C674
 isosmotic cell swelling, vestibular dark cells, C616
 Bicarbonate
 absorption, PTH transduction pathways and, proximal tubules, C941
 secretion, intercalated cells, C521
 Bicarbonate ions, intracellular, interleukin-1 β production and, monocytes, C1073
 Bone, resorption, osteoclasts, protein kinase C effects, C130
 Bradykinin, calcium signaling, endothelial, C1029
 Brain
 protein kinase effects, sodium currents, *Xenopus* oocytes, C660
 sodium-calcium exchanger, expression in diverse tissues, C1241
 Bumetanide
 β_1 -adrenoceptors, sodium-potassium-chloride cotransport and, lymphocytes, C1015
 potassium transport sensitive to, preimplantation conceptuses, C773

C

- Calcitonin
 C cell line, membrane currents in, C986
 regulation of sodium-potassium-chloride cotransport, thick ascending limb cell line, C563
 Calcium
 adenosine A₁ receptors, cell line (28A) from collecting tubule, C502
 cGMP and, arterial smooth muscle relaxation, C461
 constant, transient myosin phosphorylation at, permeabilized arteries, C540
 cytosolic
 excitation-contraction coupling, gastric smooth muscle, C1160
 interaction with magnesium-fura-2, C300
 cytosolic free, angiotensin II transduction pathways, proximal tubule, C750
 entry, antifreeze protein blockage of, parietal cells (fish), C1310
 extracellular nucleotide elevation of, osteoblasts, C1040
 fluorescence measurement, responses to endothelin, C1302
 free concentration, cultured smooth muscle cells, C95

- histamine-induced chloride secretion and, nasal epithelium, C1190
 influx
 via sodium-calcium exchange, aortic myocytes, C628, C635
 volume-sensitive, gastric parietal cells, C584
 intracellular
 homeostasis, chemical hypoxia effects, hepatocytes, C684
 signal transduction, C723
 mobilization, signal transduction by T-cell receptors, C1119
 okadaic acid effects, pancreatic stimulus-secretion coupling, C1172
 permeation, adrenal chromaffin cell calcium channels, C818
 photoreleased inositol trisphosphate, *Xenopus* oocytes, C154
 physiological concentrations, arterial smooth muscle, C948
 postischemic recovery and, preconditioned ischemic heart, C17
 potassium channels activated by, myometrium, pregnancy, C1049
 protein kinase C isoforms independent of, smooth muscle, C714
 sensitivity, muscarinic stimulation of tracheal muscle, C1258
 signaling, endothelial, C1029
 stored, inositol phosphate synthesis and, smooth muscle cells, C535
 unidirectional fluxes of, MDCK cells during junction formation, C313
 Calcium channels
 adrenal chromaffin cell, calcium and manganese permeation effects, C818
 agonist activation of, airway smooth muscle cells, C106
 carbachol monitoring of, bronchial smooth muscle, C69
 ryanodine receptor isoforms, skeletal or cardiac muscle (frog), C365
 single currents, arterial smooth muscle, C948
 Calcium ion channels, calcitonin-secreting C cell line, C986
 Calcium ionophore, whole cell current transients, RBL-2H3 cells, C736
 Calcium ions
 conductance, DHP-sensitive, ANP stimulation of, C334
 intercellular diffusion, gap junction-mediated, corporal smooth muscle cells, C373
 mobilization, extracellular ATP, myocytes, C933
 myoplasmic, cyclic nucleotide regulation of, arterial smooth muscle relaxation, C468
 nucleocytoplasmic transients, smooth muscle cells, C978
 potassium channels activated by, chemical modification of, GH₃ anterior pituitary cells, C1081
 sensing, osteoclasts, protein kinase C effects, C130
 Calcium transients, nuclear and cytoplasmic, differences, smooth muscle cells, C95
 cAMP: *see* Adenosine monophosphate, cyclic
 Captopril, ACE gene expression and, endothelial cells, C743

- Carbachol
 calcium entry and, parietal cells (fish), C1310
 cAMP messenger system and, MDCK cells, C1289
 currents induced by, T84 cells, C780
 secretory action of, protein kinase C effects, T84 cells, C140
 voltage sensitivity and, calcium channels, bronchial smooth muscle, C69
 volume-sensitive calcium transport, gastric parietal cells, C584
 Cardiomyocytes: *see also* Heart cells; Myocytes
 acceleration of growth, translocation of protein kinase C and, C319
 Carotid body, chemoreceptor cells from, C1152
 C cell line, calcitonin-secreting, membrane currents in, C986
 Cells: *see also* specific cell swelling
 potassium-induced, vestibular dark cells, C616
 volume-sensitive calcium transport, gastric parietal cells, C584
 Central nervous system, inflammatory cytokines in, C1
 CFTR: *see* Cystic fibrosis, transmembrane conductance regulator
 cGMP: *see* Guanosine monophosphate, cyclic
 Chemoreceptor cells, cultured, adult carotid body, C1152
 Chemotaxis, expression, osteoblastic cells, C194
 CHIP28, water channel, localization, kidney, C1225
 Chloride
 anion concentration, neutrophil activation and, C78
 conductance
 apical, phorbol ester effects, HT-29cl.19A cells, C759
 plasma membrane, light scattering assay, C530
 fluorescence measurement, responses to endothelin, C1302
 nickel, spontaneous depolarizations and, colonic smooth muscle cells, C691
 secretion
 basolateral potassium channels, HT-29 cells, C674
 extracellular ATP and, nasal epithelia, C348
 histamine-induced, nasal epithelium, C1190
 transport
 CFTR, B lymphocytes, C1147
 forskolin effects, skin (toad), C166
 Chloride-bicarbonate exchange, sodium-dependent, lithium and, muscle fibers (barnacle), C246
 Chloride channels
 CFTR protein effects, C267
 cochlear outer hair cells, C1088
 epithelial, regulation by direct phosphorylation, C172
 membrane fraction enriched by, tracheal and renal epithelia, C879
 membranes enriched in, immunolocalization of, C888
 small linear, nonepithelial cells, C708
 Chloride currents, carbachol induction of, T84 cells, C780

- Chloride ions, transport, stimulation by heat-stable enterotoxin, intestine, C607
- Chlorpromazine, protection from chemical hypoxia and, hepatocytes, C684
- Cholecystokinin, okadaic acid effects, pancreatic stimulus-secretion coupling, C1172
- Cholera toxin, stimulation of chloride ion transport, intestine, C607
- Choline, transport, plasma membrane vesicles, lung cells, C1250
- Cholinergic agonist, voltage sensitivity and, calcium channels, bronchial smooth muscle, C69
- Chromaffin cells, adrenal, calcium channels, permeation by calcium and manganese, C818
- Citrate, transport, proximal cell line, C220
- Citrate synthase, thyroid status effects, during chronic stimulation, C788
- Cochlear outer hair cells, delayed shortening and shrinkage, C1088
- Colchicine, apamin receptors and, skeletal muscle, C794
- Colon, smooth muscle cells, spontaneous depolarizations in, C691
- Conceptuses, preimplantation, bumetanide-sensitive potassium transport, C773
- Corticosteroids, α - and β -ATPase isoforms and, nephron, C810
- Coupling
excitation-contraction
negative-feedback regulation of, gastric smooth muscle, C1160
ryanodine receptor isoforms, skeletal or cardiac muscle (frog), C365
glucose and phosphate, renal microvilli, C509
stimulus-secretion, pancreatic, okadaic acid and, C1172
- Creatine kinase
glucose transporter expression, hypoxia and, endothelial cells, C326
heart, maturational changes in respiratory control and, C453
- Currents, membrane, calcitonin-secreting C cell line, C986
- Cyanide, intoxication, phospholipid metabolism with, hepatocytes, C684
- Cyclooxygenase, PGE₂ synthesis and, mesangial cells, C200
- Cysteine
availability, glutathione synthesis and, hepatocytes, C1181
gastric hydrogen-potassium-ATPase activity and, β -subunit, C39
- Cystic fibrosis
light scattering assay, chloride conductances, plasma membrane, C530
nasal epithelia, chloride secretion, ATP and, C348
transmembrane conductance regulator, C267, C708
antisense oligonucleotides to, B lymphocytes, C1147
sulfate transport, pancreatic epithelial cells, C176
- Cystic fibrosis gene, expression and regulation, liver regeneration, C55
- Cystine dimethyl ester, sodium-dependent transport and, LLC-PK₁ cells, C516
- Cytochalasin B, protection from chemical hypoxia and, hepatocytes, C684
- Cytochalasin D, actin cytoskeleton and, bladder epithelial cell (toad), C995
- Cytochrome c oxidase, thyroid status effects, during chronic stimulation, C788
- Cytokines
differential effects, β -cell replication, fetus, C114
inflammatory, within CNS, C1
- Cytoskeleton, actin, cytochalasin D effects, bladder epithelial cells (toad), C995
- D**
- Diabetes, genetic, G protein levels in adipocytes, C121
- Diacylglycerol, ACh actions and, M-current, gastric smooth muscle cells, C1274
- Dialysis, internal, intracellular lithium and, muscle fibers (barnacle), C246
- Diarrhea, secretory, cGMP and chloride ion transport, intestine, C607
- Dicalciphor, KCN toxicity and, C405
- Dicarboxylates, citrate transport and, proximal cell line, C220
- Diglyceride, calcium-activated phosphatidylcholine-specific, MDCK cells, C1216
- Dihydropyridine
calcium channels sensitive to, arterial smooth muscle, C948
membrane currents, calcitonin-secreting C cell line, C986
- Disulfide bonds, gastric hydrogen-potassium-ATPase activity and, β -subunit, C39
- Dopamine, content, chemoreceptor cells from carotid body, C1152
- E**
- Eicosanoids, uncoupling, cardiac myocyte pairs, neonate, C494
- Embryo, two-cell, bumetanide-sensitive potassium transport, C773
- Endothelial cells
apical and basal surfaces, comparison of, C573
gene expression, converting-enzyme, C743
glomerular, PGE₂ synthesis in mesangial cells, C200
glucose transporters, hypoxia induction of, C326
protein kinase C, ICAM-1 expression and, C767
- Endothelin
calcium and membrane potential responses to, simultaneous fluorescence measurement, C1302
magnesium mobilization and, vascular smooth muscle cells, C873
- Endothelin-1, DNA synthesis and, pulmonary artery smooth muscle cells, C1295
- Endothelin-1 mRNA, downregulation of, fluid shear stress and, aortic endothelium, C389
- Enterotoxin, heat-stable, stimulation of chloride ion transport, intestine, C607
- Epidermal growth factor
endothelin-1 stimulation of DNA and, pulmonary artery smooth muscle cells, C1295
- smooth muscle proliferation and, aortic, C420
- Epidermoid A 431 cells, calcium increase in, heat-induced, C30
- Epididymis, plasma membrane, proton ATPase in, C913
- Epithelial cells
bladder, cytochalasin D effects on actin cytoskeleton (toad), C995
lung-derived, choline transport, plasma membrane vesicles, C1250
pancreatic, sulfate transport, cystic fibrosis transmembrane regulator, C176
tracheal, chloride-transporting membrane vesicles, C888
- Erectile dysfunction, intercellular diffusion of calcium, corporal smooth muscle cells, C373
- Erythrocytes
membranes, kidney sodium-potassium pumps in, C1007
potassium-chloride cotransport, C917
potassium fluxes in, oxygenation-activated (trout), C1057
- Erythropoietin, production, IGF and, hepatoma cells, C474
- Exercise, muscle, forearm, intramuscular heterogeneity in, C357
- F**
- F-actin
cytoskeleton, cytochalasin D effects, bladder epithelial cells (toad), C995
immunogold labeling, vasopressin effects, bladder granular cells (toad), C908
- Fatty acids
metabolism, fat availability effects, skeletal muscle, C653
modulation, sodium conductance, skeletal muscle, C308
- Fetuin, fetal serum (calf), C551
- Fetus: see also Gestation; Placenta; Pregnancy
 β -cell replication, cytokines and, C114
fetuin in serum (calf), C551
- Fibroblasts
 β_2 -adrenoceptor density in, sodium-chloride sensitivity and, C623
angiotensin detection in, C851
gap junctions, differences, C959
orbital, interferon- γ as plasminogen activator inhibitor, C24
- Force, rate of rise, fatigue effects, muscle, C1065
- Force transducer, micromechanics studies, C700
- Force-velocity relations, skeletal muscle, response to hypothyroidism, C86
- Forskolin
conductive anion pathways and, skin (toad), C166
phorbol ester effects and, potassium and chloride conductance, HT-29c1.19a cells, C759
- Fura-2
calcium entry and, parietal cells (fish), C1310
calcium signaling, endothelial, C1029
histamine-induced chloride secretion and, nasal epithelium, C1190
- Furosemide, cochlear outer hair cells, C1088

G

- Gallbladder, ion transport regulation, apical membrane (*Necturus*), C187
- Gastrocnemius muscle, fat availability effects, acetyl-CoA and acetylcarnitine metabolism, C653
- Gene expression
mitochondrial, anemia and, skeletal muscle, C429
- ODC, keratinocytes, C1103
- Gene regulation, fluid shear stress and, aortic endothelium, C389
- Gene transcription, albumin and apolipoprotein B, oncotic pressure effects, hepatoma cells, C397
- Gestation: *see also* Fetus; Placenta;
Pregnancy
signal transduction pathway, PG receptors and, myometrium, C257
- GH₃ pituitary cells, anterior, chemical modification of calcium ion-activated potassium channels, C1081
- Glial cells
brain, osmoregulation of sodium-inositol cotransporter, C1282
- CNS, inflammatory cytokines in, C1
- inositol loss, volume regulatory, C412
- Glomerulosa cells, DHP-sensitive calcium conductance, ANP receptor subtypes, C334
- Glucose
binding, sodium alteration of, renal brush-border membranes, C509
- ion recovery and, during reperfusion, ischemic heart, C17
- transporter
expression, hypoxia and, endothelial cells, C326
- red and white muscle, C443
- Glutamate, anion channels for, MDCK cells, C1200
- Glutamate dehydrogenase, metabolic acidosis, LLC-PK₁ cultures, C47
- Glutaminase, phosphate-dependent, LLC-PK₁ cultures, C47
- γ -Glutamylcysteine synthetase, low cell density, hepatocytes, C1181
- Glutathione, synthesis, low cell density, hepatocytes, C1181
- Glycoproteins, fetuin, fetal serum (calf), C551
- G protein
calcium mobilization, signal transduction by T-cell receptors, C1119
- levels, adipocytes in genetic diabetes, C121
- PG receptors and, myometrium, C257
- Granular cells, bladder, vasopressin effects on immunogold actin labeling (toad), C908
- Growth: *see also* Maturation
cardiomyocytes, acceleration, protein kinase C and, C319
- differentiation, fetuin and, fetal serum (calf), C551
- myosin degradation, contractile arrest and, heart cells, neonate, C642
- vascular smooth muscle, TGF- β_1 and, C420
- Growth factor
DNA synthesis-dependent on, C-type ANP and, smooth muscle cells, C1001
- fetuin and, fetal serum (calf), C551

- Growth substances, downregulation of, fluid shear stress and, aortic endothelium, C389
- Guanosine monophosphate, cyclic activation of cAMP-dependent protein kinase, chloride transport, intestine, C607
- calcium and, arterial smooth muscle relaxation, C461
- C-type ANP inhibition, smooth muscle cell growth, C1001
- Guanylate cyclase, activation of cAMP-dependent protein kinase, chloride transport, intestine, C607
- Guanylyl cyclase, C-type ANP inhibition, smooth muscle cell growth, C1001

H

- Heart
ischemic, recovery, metabolic substrate effects, C17
- myocyte pairs, eicosanoid uncoupling of, C494
- renin-angiotensin system in, neonate, C838, C851
- sodium-calcium exchanger expression, cloned, C1241
- Heart cells: *see also* Cardiomyocytes;
Myocytes
myosin degradation, contractile arrest and, neonate, C642
- sodium-calcium exchanger in, immunofluorescence localization, C545
- Heat, cytosolic free calcium concentration and, epidermoid A 431 cells, C30
- Henle's loop, CHIP28 water channel, localization in, C1225
- Hepatectomy, liver regeneration, expression of cystic fibrosis gene during, C55
- Hepatocytes
low cell density, glutathione synthesis and, C1181
- phospholipid metabolism, chemical hypoxia effects, C684
- Hepatoma cells
erythropoietin production, insulin-like growth factors, C474
- gene transcription in, oncotic pressure regulation of, C397
- Hirudin, regulation, intracellular pH, Saos-2 cells, C1266
- Histamine, chloride secretion induced by, nasal epithelium, C1190
- Hydrogen-potassium-ATPase, gastric activity, reduction of disulfide bonds in β -subunit, C39
- Hypertension
genetic, aortic smooth muscle proliferation and TGF- β_1 , C420
- sodium-chloride sensitivity, β_2 -adrenoceptor density in fibroblasts and, C623
- Hyperthermia, heat-induced calcium increase, epidermoid A 431 cells, C30
- Hypertonicity, chronic, volume regulatory inositol loss, glial cells, C412
- Hypertrophy, cardiac, renin-angiotensin system, neonate, C838
- Hypothyroidism, skeletal muscle function and, C86
- Hypoxia
chemical, lipid metabolism with, hepatocytes, C684
- erythropoietin production, IGF and, hepatoma cells, C474
- glucose transporter expression and, endothelial cells, C326
- response to, chemoreceptor cells from carotid body, C1152

I

- ICAM-1: *see* Intracellular adhesion molecule 1
- IC250 cells, intercalated, bicarbonate-secreting, C521
- IGF: *see* Insulin-like growth factors
- Immunofluorescence
CHIP28 water channel, localization, kidney, C1225
- gap junction differences, myocytes, fibroblasts, and heterologous pairs, C959
- localization, sodium-calcium exchanger, heart cells, C545
- Impedance, transmucosal, small intestine, C480
- Influenza virus, infection, ion channel distribution in polarized endothelial cells, C573
- Inosine 5'-monophosphate
AMP deaminase binding, contracting skeletal muscle, C287
- AMP deaminase kinetics, bound muscle, C294
- Inositol, transport, glial cells, brain, C1282
- myo-Inositol, volume regulatory loss, glial cells, C412
- Inositol 1,4,5-trisphosphate, excitation-contraction coupling and, gastric smooth muscle, C1160
- Inositol phosphate
angiotensin II transduction pathways, proximal tubule, C750
- okadaic acid effects, pancreatic stimulus-secretion coupling, C1172
- PG receptors and, myometrium, C257
- PTH transduction pathways, pH effects, proximal tubules, C941
- sarcolemmal, C1021
- synthesis, stored calcium modulation of, smooth muscle cells, C535
- Inositol trisphosphate
gated channel protein, olfactory cilia, C667
- intercellular diffusion of calcium, corporal smooth muscle cells, C373
- photoreleased, membrane currents evoked by, oocytes, C154
- Insulin
action, glucose transporters and, red and white muscle, C443
- genetic diabetes, G protein levels in adipocytes, C121
- secretion, β -cell replication and, fetus, C114
- Insulin-like growth factors, erythropoietin production and, hepatoma cells, C474
- Interferon, differential effects, β -cell replication, fetus, C114
- Interferon- γ , plasminogen activator inhibitor type 1, orbital fibroblasts, C24
- Interleukin-1
differential effects, β -cell replication, fetus, C114
- expression, osteoblastic cells, C194
- Interleukin-1 β
induction of ICAM-1, after protein kinase C, endothelial cells, C767

production, lipopolysaccharide-activated monocytes, C1073

Interleukin-6, differential effects, β -cell replication, fetus, C114

Intestine, chloride ion transport, stimulation by heat-stable enterotoxin, C607

Intestine, small, impedance, sodium-coupled transport and, C480

Intracellular adhesion molecule 1, expression, protein kinase C and, C767

Iodide channel, thyroid, plasma membrane vesicle study, C590

Ion channels
distribution, polarized endothelial cells, C573
epithelial, regulation by direct phosphorylation, C172
modulation, skeletal muscle, C308
regulation, airway smooth muscle cells, C106

Ionomycin
phorbol ester effects and, potassium and chloride conductance, HT-29c1.19a cells, C759
whole cell current transients, RBL-2H3 cells, C736

Ions, transport, CFTR protein effects, C267

Ischemia, cardiac, recovery, metabolic substrate effects, C17

Isometric force, fatigue effects, fast- and slow-twitch muscles, C1065

Isoproterenol
ACh actions and, M-current, gastric smooth muscle cells, C1274
 β_1 -adrenoceptors, sodium-potassium-chloride cotransport and, lymphocytes, C1015
potassium channels activated by, myometrium, pregnancy, C1049

Isotonic properties, skeletal muscle, response to hypothyroidism, C86

J

Junction
gap, differences, myocytes, fibroblasts, and heterologous pairs, C959
tight, MDCK cells, unidirectional calcium fluxes, C313

K

KCN, toxicity, mitochondria, hepatocytes, C405

Keratinocytes, ODC gene expression in, TPA and ultraviolet B radiation interaction, C1103

Kidney
brush-border membrane, glucose and phosphate binding, C509
CHIP28 water channel, localization in, C1225
collecting duct, hydrosmotic effect of vasopressin, cAMP-dependent protein kinase and, C147
proximal cell line, citrate transport in, C220
sodium-calcium exchanger, expression in diverse tissues, C1241
thick ascending limb cell line, calcitonin regulation of sodium-potassium-chloride cotransport, C563

Kidney cells
amiloride-blockable sodium channels in, aldosterone effects, C825

cortical collecting duct, prostaglandin effects on cAMP production, C1208

cytoplasmic viscosity, organic osmolyte effects, C901

sodium-hydrogen exchange activity, angiotensin II modulation of (oposum), C1141

thick ascending limb, calcitonin regulation of sodium-potassium-chloride cotransport, C563

Kidney cortex
collecting duct, prostaglandin effects on cAMP production, C1208
membrane fraction, chloride channel-enriched, C879

Kidney epithelia, membrane fraction, chloride channel-enriched, C879

Kidney glomerulus, calcium and membrane potential, simultaneous measurement, C1302

Kidney tubules
collecting, cell line (28A), adenosine A_1 receptors from, C502
cortical collecting, sodium-induced sodium-potassium-ATPase recruitment in, C61
proximal
angiotensin II transduction pathways in, C750
localization of CHIP28 water channel, C1225
PTH transduction pathways, pH effects on, C941
sodium-potassium-ATPase expression, low potassium and, C436

L

Lactate, phosphates and, muscle fatigue (frog), C803

Leukocytes, neutrophil activation, chloride and, C78

Lidocaine
block, basolateral potassium channels, HT-29 cells, C674
isotonic cell swelling, vestibular dark cells, C616

Lipids, signaling, sodium conductance, skeletal muscle, C308

Lipopolysaccharides
induction of ICAM-1, after protein kinase C, endothelial cells, C767
monocytes activated by, interleukin-1 β production and, C1073

Lipoxygenase, uncoupling, cardiac myocyte pairs, neonate, C494

Lisinopril, ACE gene expression and, endothelial cells, C743

Lithium, intracellular, activation of sodium-hydrogen exchange, muscle fibers (barnacle), C246

Liver
regeneration, expression of cystic fibrosis gene during, C55
sodium-calcium exchanger, expression in diverse tissues, C1241

LLC-PK₁ cells
adenosine receptor-mediated pathways, localization of, C729
ammoniaogenesis, transamination role in, C47
sodium-dependent transport, cystine dimethyl ester effects, C516

Lymphocytes
CNS, inflammatory cytokines in, C1

cystic fibrosis phenotype to, antisense oligonucleotides to CFTR, C1147

sodium-potassium-chloride cotransport, β -adrenergic inhibition of, C1015

Lysophosphatidic acid, responses, *Xenopus* oocytes, C896

M

Magnesium
cytosolic, cytosolic calcium interference with, C300
mobilization of, vasopressin and endothelin effects, vascular smooth muscle cells, C873

Major histocompatibility complex, cytokines, CNS, C1

Manganese, permeation, adrenal chromaffin cell calcium channels, C818

Mast cells, whole cell current transients, substance P-induced, C736

Maturation: *see also* Growth
changes, respiratory control, creatine kinase in heart and, C453
sperm, proton ATPase in plasma membrane, C913

MDCK cells
amino acids, anion channels for, C1200
during junction formation, unidirectional calcium fluxes, C313
muscarinic receptors in, cAMP messenger system, C1289
phosphatidylcholine-specific phospholipases, calcium activated, C1216

Megakaryocyte, differential desensitization, platelet agonists, C864

Membrane
apical
adenosine receptor-mediated pathways, renal cells, C729
chloride conductance, phorbol ester effects, HT-29c1.19a cells, C759
histamine-induced chloride secretion, nasal epithelium, C1190
ion transport, regulation, gallbladder (*Necturus*), C187
proton pump, epididymis, C913
basal, bumetanide-sensitive potassium transport, preimplantation conceptuses, C773

basolateral
adenosine receptor-mediated pathways, renal cells, C729
citrate transport, C220
histamine-induced chloride secretion, nasal epithelium, C1190
potassium conductance, phorbol ester effects, HT-29c1.19a cells, C759
plasma, iodide channel, thyroid, C590

Membrane currents, photoreleased inositol trisphosphate, *Xenopus* oocytes, C154

Mesangial cells
calcium and membrane potential, simultaneous measurement, C1302
PGE₂ synthesis, glomerular endothelial cell effects, C200

Mesenteric artery, permeabilized, transient myosin light chain phosphorylation in, C540

Metabolic enzymes, thyroid status effects, during chronic stimulation, C788

Metabolites, imaging, exercise skeletal muscle, forearm, C357

Microfilaments, cultured osteoclasts, protein kinase C effects, C130

- Micromechanic studies, force transducer for, C700
- Microscopy
 confocal, sodium-calcium exchanger, heart cells, C545
 digital imaging
 calcium signaling, epithelia, C1029
 protein kinase C isoforms in smooth muscle, C714
 immunofluorescence, glucose transporters, red and white muscle, C443
 immunogold electron, localization of CHIP28 water channel, kidney, C1225
- Mineralocorticoids, membrane conductance and, TBM cells, C384
- Monocyte chemoattractant protein-1, regulated expression, osteoblastic cells, C194
- Monocytes, lipopolysaccharide-activated, interleukin- β production and, C1073
- Motility
 cell, force transducer for micromechanics studies, C700
 colonic, spontaneous depolarizations in, C691
 gastrointestinal
 spiking electrical behavior, colonic longitudinal muscle, C237
 voltage-dependent potassium currents, colonic muscle, C226
- Multidrug resistance, liver regeneration, expression of cystic fibrosis gene during, C55
- Muscle
 exercising, forearm, intramuscular heterogeneity in, C357
 fast- and slow-twitch, regulation of oxygen consumption, C598
 fatigue, phosphate role in (frog), C803
 mechanics, myosin phosphorylation, C540
- Muscle, heart, isoforms, ryanodine receptor relations (frog), C365
- Muscle, skeletal
 5'-aminolevulinatase synthase activity, anemia effects, C429
 AMP deaminase kinetics, myosin binding and, C294
 apamin receptors, colchicine-induced increase, C794
 contracting, AMP deaminase binding in, C287
 fat availability effects, acetyl-CoA and acetylcarnitine metabolism, C653
 fatigue effects, isometric force development, C1065
 function, hypothyroidism effects, C86
 isoforms, ryanodine receptor relations (frog), C365
 red and white, glucose transporters in, C443
 sodium-calcium exchanger, expression in diverse tissues, C1241
 sodium conductance, fatty acid modulation of, C308
- Muscle, smooth
 aortic, TGF- β 1 and, C420
 arterial
 relaxation, myoplasmic calcium ions, C468
 relaxation, nitrovasodilators and, C461
 single calcium channel currents, C948
 bronchial, calcium channels in, carbachol effects, C69
 calcium-independent isoforms, protein kinase C, C714
 calcium influx, via sodium-calcium exchange, aortic myocytes, C628, C635
 colonic circular, voltage-dependent potassium currents, C226
 colonic longitudinal, outward currents, spiking electrical behavior and, C237
 gastric, negative-feedback control of excitation-contraction coupling, C1160
 myometrium, calcium-activated potassium channels in pregnancy, C1049
 permeabilized, cooperative activation of myosin, C210
 tracheal, muscarinic stimulation of, calcium sensitivity during, C1258
 ureter, twitch contraction, ureter (guinea pig), C953
 vascular, intercellular diffusion of calcium ions in, C373
- Muscle cells
 corporal smooth, intercellular diffusion of calcium ions in, C373
 gastric smooth, M-current, diacylglycerol effects on ACh, C1274
 respiration, control of, C598
 smooth
 airway, agonists activate calcium channels in, C106
 differences in nuclear and cytoplasmic calcium transients, C95
 growth, C-type ANP inhibition, C1001
 inositol phosphate synthesis, calcium modulation of, C535
 nucleocytoplasmic calcium transients in, C978
 pulmonary artery, endothelin-1 effects on DNA synthesis, C1295
 spontaneous depolarizations, colon, C691
 vascular smooth, magnesium mobilization, vasopressin and endothelin effects, C873
- Muscle fibers
 red and white, glucose transporters in, C443
 sodium-hydrogen exchange, activation by lithium (barnacle), C246
 types, AMP deaminase binding in, C287
- Myocytes: *see also* Cardiomyocytes; Heart cells
 angiotensin detection in, C851
 aortic, calcium influx via sodium-calcium exchange, C628, C635
 calcium ion mobilization, extracellular ATP, C933
 colonic, spontaneous depolarizations in, C691
 gap junctions, differences, C959
 pairs, eicosanoid uncoupling of, C494
 sodium-hydrogen exchange, α -adrenergic stimulation of, C1096
- Myometrium
 calcium-activated potassium channels in, pregnancy, C1049
 signal transduction pathways in, diverse prostaglandin receptors and, C257
- Myosin
 binding, altered AMP deaminase kinetics, C294
 cooperative activation of, permeabilized smooth muscle, C210
 degradation, contractile arrest and, neonatal heart cells, C642
 phosphorylation
 agonist activation of permeabilized arteries, C540
 uncoupling stress from, arterial smooth muscle relaxation, C461
 Myosin isoforms, maximal shortening velocity and, muscle response to hypothyroidism, C86
 Myotonia, apamin receptors, skeletal muscle, C794
- N**
- Nasal epithelium
 chloride secretion
 extracellular ATP and, C348
 histamine-induced, C1190
- Neonate
 myosin degradation, heart cells, C642
 renin-angiotensin system, cardiac, C838
- Nephron, distal, α - and β -ATPase isoforms along, C810
- Nephrotic syndrome, oncotic pressure, gene transcription and, C397
- Neuroimmunology, substance P-induced whole cell current transients, RBL-2H3 cells, C736
- Neurotransmitter, whole cell current transients, substance P-induced, C736
- Neutrophils, permeabilized, anion role in activation, C78
- Nigericin, regulation, intracellular pH, Saos-2 cells, C1266
- Nisoldipine, spontaneous depolarizations and, colonic smooth muscle cells, C691
- Nitrovasodilators, arterial smooth muscle relaxation, C461
- Nonepithelial cells, small liner chloride channels endogenous to, C708
- Norepinephrine, hypertrophic growth, protein kinase C and, cardiomyocytes, C319
- Nuclear magnetic resonance
³¹P-
 control of muscle cell respiration, C598
 maturation changes in cardiac respiratory control, C453
- Nucleotides, extracellular, calcium and, osteoblastic cells, C1040
- Nucleotides, cyclic
 DHP-sensitive calcium conductance, ANP receptor subtypes, C334
 regulation of myoplasmic calcium ions, arterial smooth muscle relaxation, C468
- Nucleus, calcium transients, smooth muscle cells, C978
- Nystatin
 currents induced by, T84 cells, C780
 protein kinase C activation, chloride-secreting epithelia, C140
- O**
- Obesity, genetic diabetes and, G protein levels in, C121
- Okadaic acid, dephosphorylation and, pancreatic stimulus-secretion coupling, C1172
- Oligonucleotides, antisense, CFTR, expansion in lymphocytes, C1147

Oocytes
 photoreleased inositol trisphosphate, membrane currents evoked by, C154

Xenopus
 protein kinase A effects on sodium currents, C660
 responses to lysophosphatidic acid, C896

Osmolytes
 organic
 cytoplasmic viscosity and, kidney cells, C901
 sodium-inositol cotransporter, brain, C1282
 volume regulatory inositol loss, glial cells, C412

Osmoregulation, sodium-inositol cotransporter, brain glial cells, C1282

Osteoblasts
 calcium, extracellular nucleotide effects, C1040
 expression of monocyte chemoattractant protein-1 in, C194
 intracellular pH, thrombin regulation of, C1266

Osteoclasts, function, protein kinase C effects, C130

Ouabain
 potentiation of twitch contraction, ureter (guinea pig), C953
 sodium-potassium-ATPase pumps, rapid recruitment of, cortical collecting tubule, C61
 spontaneous depolarizations and, colonic smooth muscle cells, C691

Oxygen
 consumption
 creatine kinase in heart and, C453
 regulation of, muscle cells, C598
 erythropoietin production regulated by, IGF and, hepatoma cells, C474
 tension, low and high, potassium fluxes in erythrocytes (trout), C1057

P

Pancreas
 duct, sulfate transport, cystic fibrosis transmembrane regulator, C176
 sodium-calcium exchanger, expression in diverse tissues, C1241
 stimulus-secretion coupling, okadaic acid in, C1172

Pancreatic acini, calcium and magnesium ions in, C300

Pancreatic islets, replication, cytokines and, fetus, C114

Parathyroid hormone
 angiotensin II effects, kidney cells (opossum), C1141
 transduction pathways, extracellular pH modulations of, proximal tubules, C941

Parietal cells
 calcium entry, antifreeze protein blockage of (fish), C1310
 gastric, volume-sensitive calcium transport, C584

Penis, intercellular diffusion of calcium, corporal smooth muscle cells, C373

Perforated-patch technique, sodium kinetics during, C1234

Permeability
 calcium, antifreeze proteins and, parietal

cells (fish), C1310
 water, cAMP-dependent protein kinase mediation of, C147

Pertussis toxin, G protein sensitive to, responses to lysophosphatidic acid, *Xenopus* oocytes, C896

PG: see Prostaglandin

pH
 extracellular, transduction pathways of PTH and, proximal tubule, C941
 intracellular
 interleukin-1 β production and, monocytes, C1073
 thrombin regulation, Saos-2 cells, C1266

Phosphoinositides, sarcolemmal, C1021

Phorbol esters
 regulation, chloride and potassium conductance, HT-29cl.19a cells, C759
 translocation of, cardiomyocyte growth and, C319

Phorbol myristate acetate, ICAM-1 induction and, endothelial cells, C767

Phorbol 12-myristate 13-acetate
 protein kinase C activation, chloride-secreting epithelia, C140
 sodium-potassium-ATPase pumps, rapid recruitment of, cortical collecting tubule, C61

Phosphates
 binding, sodium alteration of, renal brush-border membranes, C509
 high-energy, role in muscle fatigue (frog), C803
 inorganic
 fatigue effects, muscle, C1065
 role in muscle fatigue (frog), C803

Phosphatidic acid, calcium-activated, MDCK cells, C1216

Phosphatidylcholine, transport, plasma membrane vesicles, lung cells, C1250

Phosphocreatine
 control of respiration, muscle cells, C598
 glucose transporter expression, hypoxia and, endothelial cells, C326
 phosphates and, muscle fatigue (frog), C803

Phosphofructokinase, thyroid status effects, during chronic stimulation, C788

Phosphoinositides, adenosine A₁ receptors, cell line (28A) from collecting tubule, C502

Phospholipase
 calcium mobilization, signal transduction by T-cell receptors, C1119
 phosphatidylcholine-specific, calcium activated, MDCK cells, C1216

Phospholipase A₂, PGE₂ synthesis and, mesangial cells, C200

Phospholipase C
 megakaryocytic desensitization and, C864
 sarcolemmal, C1021

Phospholipids, metabolism, chemical hypoxia and, hepatocytes, C684

Phosphorylation, direct, regulation of epithelial chloride channel, C172

Placenta: see also Fetus; Gestation; Pregnancy
 sodium-calcium exchanger, expression in diverse tissues, C1241

Plantaris muscle, function, hypothyroidism

effects, C86

Plasminogen activator inhibitor type 1, interferon- γ as inducer of, orbital fibroblasts, C24

Platelet-activating factor
 lysophosphatidic acid responses, *Xenopus* oocytes, C896
 megakaryocytic desensitization and, C864

Platelet-derived growth factor, endothelin-1 stimulation of DNA and, pulmonary artery smooth muscle cells, C1295

Polyamines, nuclear, during spermatogenesis, C343

Portal vein, calcium-independent isoforms, protein kinase C, C714

Potassium
 conductance
 ATP and, nasal epithelia, C348
 basolateral, phorbol ester effects, HT-29cl.19a cells, C759
 membrane, aldosterone effects, TBM cells, C384
 flux, oxygenation-activated, erythrocytes (trout), C1057
 histamine-induced chloride secretion and, nasal epithelium, C1190
 influx, via sodium-calcium exchange, aortic myocytes, C628, C635
 low, sodium-potassium-ATPase expression and, proximal tubules, C436
 transport, bumetanide-sensitive, preimplantation conceptuses, C773

Potassium channels
 basolateral, HT-29/B6 cells, C674
 calcium activated, myometrium, pregnancy, C1049
 calcium ion-activated, chemical modification of, GH₃ anterior pituitary cells, C1081
 cochlear outer hair cells, C1088
 distribution, polarized endothelial cells, C573
 involvement, isosmotic cell shrinking in vestibular dark cells, C616

Potassium-chloride cotransport, erythrocytes, C917

Potassium currents
 carbachol induction of, T84 cells, C780
 outward, spiking electrical behavior and, colonic longitudinal muscle, C237
 voltage-dependent, colonic circular muscle, C226

Potentials
 action, sodium vanadate and, ureter (guinea pig), C953
 membrane
 fluorescence measurement, responses to endothelin, C1302
 KCN-induced mitochondrial failure, hepatocytes, C405
 oscillations, carbachol-induced, T84 cells, C780

Pregnancy: see also Fetus; Gestation; Placenta
 calcium-activated potassium channels in, myometrium, C1049

Pressure, oncotic, gene transcription and, hepatoma cells, C397

Prostaglandins, receptors: see Receptors

Prostaglandin E₂
 cAMP production and, CCD cells, C1208
 synthesis, mesangial cell, glomerular endothelial cell effects, C200

Proteins

- antifreeze, calcium entry and, parietal cells (fish), C1310
- c-myc, TGF- β interaction, C420
- contractile
 - binding, contracting skeletal muscle, C287
 - calcium sensitivity and, tracheal muscle, C1258
- inositol triphosphate-gated channel, olfactory cilia, C667
- phosphorylation, hydrosmodic effect of vasopressin, C147
- purification, amiloride-binding subunit, C1111
- Protein kinase
 - cAMP-dependent
 - activation by cGMP, chloride transport, intestine, C607
 - hydrosmodic effect of vasopressin and, collecting duct, C147
- Protein kinase A
 - phosphorylation, enhancement of sodium currents and, *Xenopus* oocytes, C660
 - regulation, calcium ion mobilization, myocytes, C933
- Protein kinase C
 - angiotensin II effects, kidney cells (opossum), C1141
 - calcium-activated phosphatidylcholine-specific, MDCK cells, C1216
 - calcium-independent isoforms, smooth muscle, C714
 - carbachol's secretory action and, T84 cells, C140
 - excitation-contraction coupling and, gastric smooth muscle, C1160
 - ICAM-1 induction and, endothelial cells, C767
 - myosin degradation, contractile arrest and, heart cells, neonate, C642
 - osteoclast function and, C130
 - phorbol ester effects and, potassium and chloride conductance, HT-29c1.19a cells, C759
 - regulation, calcium ion mobilization, myocytes, C933
 - translocation of, cardiomyocyte growth and, C319
- Proton-adenosine triphosphatase, bicarbonate-secreting intercalated cells, C521
- PTH: see Parathyroid hormone
- Pulmonary artery, endothelial cells, ACE gene expression, converting enzyme inhibitor effects, C743
- Pump
 - proton, plasma membrane of epididymis, C913
 - sodium-potassium, erythrocyte membranes, C1007
 - sodium-potassium-ATPase, rapid recruitment of, cortical collecting tubule, C61
- Putrescine, nuclear, during spermatogenesis, C343
- Quinidine
 - block, basolateral potassium channels, HT-29 cells, C674
 - isosmotic cell swelling, vestibular dark cells, C616

Quinine, isosmotic cell swelling, vestibular dark cells, C616

R

- RBL-2H3 cells, whole cell current transients, substance P-induced, C736
- Receptors
 - adenosine, localization, LLC-PK₁ cells, C729
 - adenosine A₁, cell line (28A) from collecting tubule, C502
 - β ₁-adrenoceptors
 - gap junctions and calcium mobilization, smooth muscle cells, C373
 - sodium-potassium-chloride cotransport and, lymphocytes, C1015
 - β ₂-adrenoceptors, fibroblast, sodium-chloride sensitivity, C623
 - apamin, colchicine-induced increase, skeletal muscle, C794
 - endothelin, PGE₂ synthesis and, mesangial cells, C200
 - internalization, calcium signaling in endothelium, C1029
 - muscarinic
 - calcium sensitivity and, trachea, C1258
 - cAMP messenger system, MDCK cells, C1289
 - prostaglandin, signal transduction pathways and, myometrium, C257
 - purinoceptor, calcium elevation, osteoblasts, C1040
 - ryanodine, isoforms, skeletal or cardiac muscle relations (frog), C365
 - T-cell, signal transduction by, C1119
- Renin-angiotensin system, cardiac, neonatal heart, C838
- Reperfusion, ion recovery during, glucose effects, ischemic heart, C17
- Resistance, transepithelial electrical, MDCK cells, unidirectional calcium fluxes, C313
- Respiratory burst, neutrophil activation, chloride and, C78
- Respiratory control
 - cellular, muscle cells, C598
 - maturational changes, creatine kinase in heart and, C453
- Reticulocytes, membranes, kidney sodium-potassium pumps in, C1007
- Ribonucleic acid
 - messenger
 - cystic fibrosis gene during liver regeneration, C55
 - oncotic pressure and gene transcription, C397
 - β -subunit, regulation of, proximal tubules, C436
 - ribosomal, hypertrophic growth and protein kinase C, C319
- Rubidium, transport, bumetanide-sensitive, preimplantation conceptuses, C773
- Ryanodine, receptors: see Receptors

S

- Salivary gland, acini, calcium and magnesium in, C300
- Salt, sensitivity, β ₂-adrenoceptor density in fibroblasts and, C623
- Saos-2 cells, intracellular pH, thrombin regulation of, C1266
- Sarcolemma, phospholipase C, C1021

- Sarcoplasmic reticulum, inositol phosphate synthesis, calcium modulation of, smooth muscle cells, C535
- Semitendinosus muscle, fatigue, phosphate role in (frog), C803
- Serum, fetuin, fetus (calf), C551
- Shock, heat, calcium increase, epidermoid A 431 cells, C30
- Signal transduction
 - angiotensin II and nonpeptide receptor agonists, proximal tubule, C750
 - intracellular, four dimensions, C723
 - myometrium, diverse prostaglandin receptors and, C257
 - T-cell receptors, calcium mobilization, C1119
- Simian virus 40, renal cells, calcitonin regulation of sodium-potassium-chloride cotransport, C563
- Skin, forskolin effects, conductive anion pathways (toad), C166
- Sodium
 - conductance of, fatty acid modulation, skeletal muscle, C308
 - glucose and phosphate binding and, renal brush-border membranes, C509
 - heat-induced calcium increase, epidermoid A 431 cells, C30
 - intracellular concentration, cortical collecting tubule, C61
 - transport
 - amiloride-binding subunit, C1111
 - amiloride-blockable, aldosterone effects, A6 cells, C825
 - membrane, aldosterone effects, TBM cells, C384
- Sodium-calcium exchange, calcium influx via, aortic myocytes, C628, C635
- Sodium-calcium exchanger
 - expression, diverse tissues, C1241
 - heat-induced calcium increase, epidermoid A 431 cells, C30
 - immunofluorescence localization of, heart cells, C545
- Sodium channels
 - activity, amiloride-binding subunit, C1111
 - amiloride-blockable, aldosterone effects, A6 cells, C825
 - kinetics, perforated-patch recordings, C1234
- Sodium-chloride, sensitivity, β ₂-adrenoceptor density in fibroblasts and, C623
- Sodium currents, enhancement of, protein kinase A and, *Xenopus* oocytes, C660
- Sodium-hydrogen exchange
 - activation of, intracellular lithium, muscle fibers (barnacle), C246
 - activity, modulation by angiotensin II, kidney cells (opossum), C1141
 - α -adrenergic stimulation of, myocytes, C1096
- Sodium-hydrogen exchanger, cystine dimethyl ester, LLC-PK₁ cells, C516
- Sodium-inositol cotransporter, osmoregulation of, brain glial cells, C1282
- Sodium-iodide cotransport, thyroid, plasma membrane vesicle study, C590
- Sodium ions, intracellular, interleukin-1 β production and, monocytes, C1073
- Sodium-potassium-ATPase
 - choline transport and, plasma membrane vesicles, lung cells, C1250

cystine dimethyl ester, LLC-PK₁ cells, C516
 expression, low potassium effects, proximal tubule, C436
 low potassium, red blood cell membranes, kidney, C1007
 mRNA expression, adrenalectomy effects, distal nephron, C810
 sodium-induced, time course, cortical collecting tubule, C61
 Sodium-potassium-chloride cotransport β -adrenergic inhibition of, lymphocytes, C1015
 calcitonin regulation of, thick ascending limb cell line, C563
 Sodium vanadate, potentiation of twitch contraction, ureter (guinea pig), C953
 Soleus muscle
 fat availability effects, acetyl-CoA and acetylcarnitine metabolism, C653
 function, hypothyroidism effects, C86
 Spectroscopy, phosphorus-31 nuclear magnetic resonance, exercising forearm muscle, C357
 Sperm, maturation, proton ATPase in plasma membrane, C913
 Spermatogenesis, nuclear polyamines during, cell differentiation, C343
 Spermidine, nuclear, during spermatogenesis, C343
 Staurosporine
 hypertrophic growth, protein kinase C and, cardiomyocytes, C319
 protein kinase C activation, chloride-secreting epithelia, C140
 Stress, mechanical, downregulation of endothelin-1 mRNA and, aortic endothelium, C389
 Submandibular glands, calcium interaction, magnesium-fura-2, C300
 Substance P, whole cell current transients and, RBL-2H3 cells, C736
 Substrates, metabolic, postischemic recovery and, heart, C17
 Sugar, transport, transmucosal impedance and, small intestine, C480
 Sulfate, transport, pancreas epithelial cells, C176
 Sulfhydryl, gastric hydrogen-potassium-ATPase activity and, β -subunit, C39
 Superoxide, neutrophil activation, chloride and, C78

T

Taurine, anion channels for, MDCK cells, C1200
 TBM cells, membrane conductance in, aldosterone effects, C384

T84 cells
 potassium and chloride currents, carbachol-induced, C780
 protein kinase C, secretory action of carbachol and, C140
 Tetraethylammonium, spontaneous depolarizations and, colonic smooth muscle cells, C691
 TGF- β 1; *see* Transforming growth factor- β
 Thapsigargin
 stored calcium effects, smooth muscle cells, C535
 volume-sensitive calcium transport, gastric parietal cells, C584
 Thrombin
 calcium signaling, endothelial, C1029
 megakaryocytic desensitization and, C864
 regulation, intracellular pH, Saos-2 cells, C1266
 Thromboxane A₂, megakaryocytic desensitization and, C864
 Thyroid
 iodide channel, plasma membrane vesicle study, C590
 membrane currents, calcitonin-secreting C cell line, C986
 status, effect on metabolic enzymes during chronic stimulation, C788
 Trachea
 membrane vesicles, chloride-transporting, immunolocalization, C888
 muscarinic stimulation, calcium sensitivity during, C1258
 Tracheal epithelia, membrane fraction, chloride channel-enriched, C879
 Transaminases, ammoniogenesis and, LLC-PK₁ cultures, C47
 Transforming growth factor- β 1, smooth muscle proliferation and, aortic, C420
 Transmembrane conductance regulator, cystic fibrosis, light scattering assay, C530
 Tricarboxylates, citrate transport and, proximal cell line, C220
 1,4,5-Trisphosphate, gated channel protein, olfactory cilia, C667
 Tumor necrosis factor- α , induction of ICAM-1, after protein kinase C, endothelial cells, C767
 Tyrosine kinase, calcium mobilization, signal transduction by T-cell receptors, C1119

U

Ultraviolet B radiation, TPA interaction, ODC gene expression and, keratinocytes, C1103
 Ureter, twitch contraction, sodium vanadate and (guinea pig), C953

Uridine triphosphate, extracellular nucleotide elevation of calcium, osteoblasts, C1040
 Urinary bladder
 epithelial cells, cytochalasin D effects on actin cytoskeleton (toad), C995
 granular cells, vasopressin effects on immunogold actin labeling (toad), C908

V

Valinomycin, thyroid iodide channel, plasma membrane vesicle study, C590
 Vasodilation
 calcium and cGMP, arterial smooth muscle relaxation, C461
 regulation of myoplasmic calcium ions, arterial smooth muscle relaxation, C468
 Vasopressin
 calcium and membrane potential, simultaneous measurement, C1302
 hydropototic effects of, cAMP-dependent protein kinase mediation of, C147
 immunogold actin labeling and, bladder granular cell (toad), C908
 magnesium mobilization and, vascular smooth muscle cells, C873
 stored calcium effects, smooth muscle cells, C535
 Verapamil, isosmotic cell swelling, vestibular dark cells, C616
 Vestibular labyrinth, isosmotic cell swelling, mechanism for, C616
 Vinculin, immunofluorescence localization of, heart cells, C545
 Volume
 cell
 basolateral potassium channels, HT-29 cells, C674
 potassium-chloride cotransport, erythrocytes, C917
 regulation
 cochlear outer hair cells, C1088
 decrease, channels for amino acids, MDCK cells, C1200
 decrease, potassium fluxes, erythrocytes (trout), C1057
 recovery from chronic hypertonicity, glial cells, C412

W

Water channels
 CHIP28, localization, kidney, C1225
 immunogold actin labeling, vasopressin effects, bladder granular cells (toad), C908



Author Index to Volume 32

- Abramow, M., C590, C1111
 Achard, J. M., C750
 Adragma, N. C., C917
 Agrotis, A., C420
 Ahmed, A., C24
 Ahn, H. Y., C540
 Al-Awqati, Q., C521
 Al-Hassani, M. H., C1258
 Allo, S. N., C319
 Ambesi, A., C545
 Amiel, C., C1141
 Anwer, K., C1049
 Arend, L. J., C502
 Argentino, L., C130
 Ausiello, D. A., C1225
- Baier, W., C474
 Bajnath, R. B., C759
 Baker, K. M., C838, C851
 Baldwin, K. M., C86
 Ballermann, B. J., C200
 Balon, T. W., C443
 Banderali, U., C1200
 Barac-Nieto, M., C509
 Barclay, C. J., C1065
 Barrett, P. Q., C334
 Bashan, N., C516
 Baudouin, B., C563
 Bauer, C., C474
 Bauer, J., C917
 Beauwens, R., C590
 Bégin-Heick, N., C121
 Behrens, M. I., C794
 Ben-Nun, A., C516
 Benos, D. J., C267
 Benveniste, E. N., C1
 Berman, D. M., C535
 Berta, G., C1147
 Biagi, B. A., C986
 Bienenstock, J., C736
 Blanchard, Y., C343
 Blennerhassett, M. G., C736
 Bloch, R. J., C545
 Blostein, R., C1007
 Blot-Chabaud, M., C61, C810
 Bobik, A., C420
 Bonvalet, J. P., C61, C810
 Boron, W. F., C246
 Boucher, R. C., C348, C708, C1190
 Bourbouze, R., C810
 Boyle, A. G., C667
 Boyle, J. P., C106
 Brautigan, D. L., C172
 Brett, J., C326
 Breyer, M. D., C147, C1208
 Brinck, R. W., C300
 Brown, D., C913, C1225
 Brown, T. R., C357, C598
 Browning, C. M., C39
 Bubien, J. K., C1147
 Burt, J. M., C494
 Butler, T. M., C210
 Buxton, I. L. O., C1160
- Caiozzo, V. J., C86
 Calenzo, M. A., C879, C888
 Campione, A. L., C773
 Cao, L., C326
 Carl, L. L., C319
- Carter, C. E., C1208
 Cassingena, R., C563
 Casteels, R., C95, C978
 Catalano, R., C1001
 Cederblad, G., C653
 Cerejido, M., C313
 Chander, A., C1250
 Chang, X.-B., C530
 Chase, H. S., Jr., C140
 Chen, X.-L., C461, C468
 Chernin, M. I., C838
 Chou, S., C530
 Chow, D. C., C39
 Christ, G. J., C373
 Christie, A., C933
 Clapp, L. H., C1274
 Clarke, L. L., C348, C1190
 Clauss, W., C674
 Cochran, D., C194
 Cohen-Luria, R., C516
 Colden-Stanfield, M., C573
 Colucci, S., C130
 Conrad, K. M., C851
 Contreras, R. G., C313
 Cooper, G. R., C838, C851
 Corbin, J. D., C607
 Cossins, A. R., C1057
 Coutry, N., C61, C810
 Cramer, E. B., C573
- Davin, D., C55
 Davis, B. A., C246
 Davis, M. G., C864
 Decker, E. R., C888
 de Jonge, B., C959
 de Jonge, H. R., C759
 Delpire, E., C917
 Del Vecchio, P. J., C1295
 De Smedt, H., C95, C978
 Devlin, T. M., C405
 Devor, D. C., C780
 Dho, S., C530
 Dillard, M., C172
 Ding, G., C995
 Dixon, S. J., C1040
 Dodia, C., C1250
 Dorn, G. W., II, C864
 Dorsam, G., C194
 Dostal, D. E., C838, C851
 Downey, G. P., C78
 Droogmans, G., C95
 Drucker, D. J., C1103
 Dubinsky, W. P., C879, C888
 Duffey, M. E., C780
 Dumont, J. E., C590
 Dunham, P. B., C1007
 Durieux, M. E., C896
 Dyck, D. J., C653
- Eaton, D. C., C825, C1081
 Eber, S. L., C607
 Eckardt, K., C474
 Edwards, J. C., C521
 El Aoumari, A., C959
 Elgavish, A., C176
 El-Hashem, A., C365
 Engelmann, G. L., C642
 Enyeart, J. J., C986
 Essig, D. A., C429
 Estrade, S., C563
- Farber, J. L., C684
 Farman, N., C61, C810
 Feldman, R. D., C1015
 Figge, J., C1295
 Finn, A. L., C172
 Fischer, H., C674
 Fisher, A. B., C1250
 Fisher, M. A., C1295
 Fisher, R. S., C1111
 Fitts, R. H., C803
 Fletcher, G. L., C1310
 Fletcher, J. E., C308
 Fonteriz, R. I., C818
 Forte, J. G., C39
 Forte, L. R., C607
 Foskett, J. K., C530
 Frace, A. M., C1081
 Fralix, T. A., C17
 Francis, S. H., C607
 Franki, N., C908, C995
 Freeman, R. H., C607
 Friedlander, G., C1141
 Fröhlich, O., C1096
 Fujise, H., C917
 Fukuhara, Y., C397
 Fuller, C. M., C267
 Furuya, W., C78
 Fushimi, K., C901
- Gabriel, S. E., C708
 Gaido, M. L., C172
 Gajic, D., C1103
 Gallin, E. K., C573
 Gandia, L., C818
 Gao, Y., C908, C995
 Garcia, A. G., C818
 Garcia-Sancho, J., C818
 Gardin, J. P., C750, C941
 Gardner, P., C1119
 Garg, L. C., C1289
 Garvin, J. L., C187
 Ge, J.-L., C1181
 Geniteau-Legendre, M., C563
 Gerthoffer, W. T., C1258
 Gluck, S., C913
 Goldin, A. L., C660
 Goldman, W. F., C535
 Gollasch, M., C948
 Golstein, P., C590
 Gong, Q.-H., C308
 González, C., C1152
 González-Mariscal, L., C313
 Gore, R. W., C700
 Goureau, O., C257
 Grano, M., C130
 Grant, A. O., C1234
 Graves, D. T., C194
 Grinstein, S., C78
 Groot, J. A., C759
 Gros, D., C959
 Gstraunthaler, G., C47
 Guilford, W. H., C700
 Gunst, S. J., C1258
 Gupta, R. K., C509
- Hadley, R. W., C1241
 Hamm, L. L., C220
 Hara, M., C1088
 Harbon, S., C257
 Havouis, R., C343
- Hays, R. M., C908, C995
 Hegel, U., C674
 Hering-Smith, K. S., C220
 Herreros, B., C1152
 Herrick, R. E., C86
 Herzlinger, D., C521
 Hescheler, J., C948
 Higgins, P. J., C24
 Himpens, B., C95, C978
 Hogan, E. M., C246
 Hogg, M. G., C24
 Hoglinger, O., C623
 Honda, E., C667
 Hood, D. A., C788
 Horisberger, J.-D., C384
 Houillier, P., C750, C941
 Hultman, E., C653
 Hume, J. R., C691
 Hurley, T. W., C300
- Illek, B., C674
 Imai, E., C397
 Inagaki, C., C1088
 Inoue, M., C1088
 Isales, C. M., C334
 Ishikawa, S., C873
 Ivorra, I., C154
 Izumo, S., C389
- Jacobson, H. R., C1208
 Janakidevi, K., C1295
 Janiszewski, J., C736
 Jeneson, J. A. L., C357
 Jia, Q., C1103
 Jiang, Y., C194
 Jones, D. P., C405
 Jongsma, H. J., C959
 Jourdain, M., C1141
- Kalinoski, D. L., C667
 Kamada, T., C397
 Kamal, S. A., C642
 Kamishima, T., C69
 Kao, H. P., C901
 Kelly, A. M., C788
 Kemendy, A. E., C825
 Khalil, R. A., C714
 Kiang, J. G., C30
 Kieval, R. S., C545, C1241
 King, S. J., C743
 Kleinzeller, A., C1250
 Kleyman, T. R., C825
 Klip, A., C443
 Klotz, K.-N., C502
 Koenig, M. L., C30
 Kofuji, P., C1241
 Kotanko, P., C623
 Kotlikoff, M. I., C106
 Kramarcy, N. R., C365
 Krause, W. J., C607
 Krauss, R. D., C55, C1147
 Kremer, S. G., C1302
 Kreusel, K.-M., C674
 Kumazawa, T., C1088
 Kurtz, A., C474
 Kushmerick, M. J., C598
 Kwon, H. M., C1282
- Lai, F. A., C365
 Lajoie, C., C714
 Landauer, F., C47

- Lauf, P. K., C917
 Law, D., C220
 Lazar, G., C750, C941
 Lebowitz, J., C521
 Lederer, W. J., C545, C1241
 Lescoat, D., C343
 LeVier, D. G., C502, C729
 Levy, M. N., C933
 Lewicki, J. A., C334, C1001
 Lindeman, R. P., C140
 Lindenmayer, G. E., C545
 Liu, Q.-Y., C365
 Liu, S. M., C509
 Logvinenko, N., C810
 Loike, J. D., C326
 London, R. E., C17
 Lopez, M. G., C818
 López-López, J. R., C1152
 Lu, S. C., C1181
 Lui, B., C913
 Lykkeboe, G., C1057
 Lynch, K. R., C896
 Lyu, R.-M., C628, C635
 Macaluso, F., C908
 Machen, T. E., C584, C1029, C1310
 Malek, A., C389
 Malik, A. B., C1295
 Maloney, V., C642
 Marc, S., C257
 Marcus, D. C., C616
 Marecek, J. F., C667
 Marette, A., C443
 Massey, K. D., C494
 Mateo, P., C61
 McCoy, D. E., C729
 McDaniel, N. L., C461
 McDonough, A. A., C436
 McEnroe, G., C1001
 McManus, M., C1282
 McNabney, L. A., C429
 Meezan, E., C176
 Meissner, G., C365
 Melman, A., C373
 Meyer, R. A., C598
 Miller, D. M., C55
 Miller, J. H., C313
 Minato, A., C1088
 Minnich, B. N., C494
 Mlinar, B., C986
 Mohuczy-Dominiak, D., C1289
 Mooers, S. U., C210
 Moorman, J. R., C896
 Moran, A., C516
 Moreland, R. S., C540
 Moreland, S., C540
 Moreno, A. P., C373
 Morgan, H. E., C319
 Morgan, K. G., C714
 Moriyama, K., C953
 Morrison, R., C412
 Moulinoux, J. P., C343
 Munk, B., C584
 Munzer, J. S., C1007
 Murphy, E., C17
 Murphy, R. A., C461
 Murphy-Boesch, J., C357
 Myers, C. L., C767
 Nagel, W., C166
 Narayan, S. R., C210
 Nee, J. J., C334
 Negulescu, P. A., C584, C1029, C1310
 Nelson, M. T., C69, C948
 Nelson, S. J., C357
 Newton, R. C., C1073
 Nie, Z., C551
 Nielsen, O. B., C1057
 Ning, X.-H., C453
 Nishimura, J., C540
 Noguchi, T., C397
 Noland, T. D., C147, C1208
 Oberti, C., C1049
 Obeso, A., C1152
 Ofori-Darko, E., C1266
 Ogawa, S., C326
 Ohnishi, S., C1088
 Okada, K., C873
 Olson, B. A., C502
 Oparil, S., C743
 Orlinska, U., C1073
 Ozaki, H., C1160
 Paillard, M., C750, C941
 Pappenheimer, J. R., C480
 Paradiso, A. M., C1190
 Paredes, A., C1282
 Park, Y., C405
 Parker, I., C154
 Parks, T., C767
 Patlak, J. B., C69, C948
 Pérez-García, M. T., C1152
 Periasamy, N., C901
 Pessin, J. E., C443
 Peterson, M. W., C1216
 Pette, D., C788
 Pfaller, W., C47
 Poggioli, J., C750, C941
 Porter, J. G., C1001
 Portman, M. A., C453
 Post, J. M., C691
 Potashnik, R., C516
 Premack, B. A., C1119
 Preston, C. L., C879, C888
 Prestwich, G. D., C667
 Price, E. M., C708
 Protter, A. A., C1001
 Publicover, N. G., C1160
 Quayle, J. M., C948
 Quemener, V., C343
 Rado, T. A., C55, C1147
 Ramlal, T., C443
 Ratcliffe, P., C474
 Rater, M., C521
 Reimer, W. J., C1040
 Rembold, C. M., C461, C468
 Resnick, M. S., C714
 Restrepo, D., C667
 Richardson, J. M., C443
 Rommens, J. M., C530
 Ronco, P., C563
 Rook, M. B., C959
 Rosen, C. F., C1103
 Rothblum, K. N., C838, C851
 Roy, G., C1200
 Rubinsky, B., C1310
 Rundell, K. W., C287, C294
 Ryan, M. P., C300
 Ryu, K. H., C917
 Sabolić, I., C913, C1225
 Saito, T., C873
 Sakaida, I., C684
 Salafranca, M. N., C896
 Saltis, J., C420
 Samarel, A. M., C642
 Sanborn, B. M., C1049
 Sanders, K. M., C226, C237, C1160
 Sariban-Sohraby, S., C1111
 Scarpa, A., C933
 Schembri-King, J., C767
 Scholz, H., C474
 Schulze, D. H., C1241
 Schwabe, U., C502
 Seacock, R., C365
 Shiga, N., C616
 Shimamura, K., C953
 Siegman, M. J., C210
 Silverstein, S. C., C326
 Silvius, J. R., C1007
 Simoneau, J.-A., C788
 Sims, S. M., C1274
 Singer, H. A., C461
 Singer, J. J., C1274
 Sjöholm, Å., C114
 Skorecki, K. L., C1302
 Skrabal, F., C623
 Smallridge, R. C., C30
 Smith, J. B., C628, C635
 Smith, L., C628, C635
 Smith, R. D., C660
 Smith, T. J., C24
 Snyder, H. M., C147
 Spielman, W. S., C502, C729
 Spragia, M. L., C642
 Spray, D. C., C373
 Spriet, L. L., C653
 Spring, K. R., C187
 Starmer, C. F., C1234
 Steenbergen, C., C17
 Stefani, E., C1049
 Stern, D., C326
 Strange, K., C412, C1282
 Stutts, M. J., C708
 Sunano, S., C953
 Takenaka, M., C397
 Tanaka, T., C397
 Tanfin, Z., C257
 Tang, M.-J., C436
 Tashjian, A. H., Jr., C1266
 Taylor, J. S., C357
 Teeter, J. H., C667
 Terjung, R. L., C287, C294
 Teti, A., C130
 Teulon, J., C563
 Thomas, A. P., C684
 Thompson, L. V., C803
 Thornbury, K. D., C226, C237
 Thorne, P. K., C607
 Tirupathi, C., C1295
 Tomasic, M., C106
 Toro, L., C1049
 Tran-Paterson, R., C55
 Tsien, R. Y., C723
 Tullson, P. C., C287, C294
 Uchida, K., C200
 Ueda, N., C397
 Valenti, G., C1225
 van Adelsberg, J., C521
 van Breemen, C., C540
 Vandewalle, A., C563
 Van Driessche, W., C166
 van Ginneken, A. C. G., C959
 Van Hoek, A. N., C1225
 van Hoeve, M. H., C759
 Van Winkle, L. J., C773
 Verbavatz, J.-M., C1225
 Vergara, C., C794
 Verkman, A. S., C901, C1225
 Vigneron, D. B., C357
 Volpp, K., C480
 Vranic, M., C443
 Vuillemin, T., C563
 Vyas, T. B., C210
 Wagner, A. C. C., C1172
 Wallace, R. W., C767
 Wallert, M. A., C1096
 Walsh, J. V., Jr., C1274
 Walter, M. E., C1216
 Wangemann, P., C616
 Ward, S. M., C226, C237
 Weintraub, W. H., C1029
 Welch, C., C616
 Wendt, D. J., C1234
 Wertheimer, S. J., C767
 White, G. J., C888
 Wieland, S. J., C308
 Williams, J. A., C1172
 Williams, S. R., C194
 Wishart, M. J., C1172
 Witherell, J. C., C210
 Wolf, R. A., C1021
 Worley, J. F., III, C106
 Xu, L., C365
 Xu, Z.-C., C1007
 Yamamoto, S., C397
 Yamashita, T., C1088
 Yamauchi, A., C397
 Yano, F., C397
 Yule, D. I., C1172
 Zade-Oppen, A. M. M., C917
 Zamboni Zallone, A., C130
 Zamora, M., C313
 Zapf, J., C474
 Zeng, W., C1302
 Zhang, L., C1160
 Zheng, J.-S., C933

